United States Patent [19]

O'Connor et al.

[54] **DATA MODEM WITH ADAPTIVE SYNCHRONIZED SPEED CHANGE**

[75] Inventors: **Donald C. O'Connor**, Miami; **Juan E. Farias**, Sunrise; **Raul F. Fernandez**, Miami, all of Fla.

[73] Assignee: **Racal Data Communications Inc.**, Sunrise, Fla.

[56] **References Cited**

U.S. PATENT DOCUMENTS

3,457,550	7/1969	Gibson et al.	375/58
3,534,264	10/1970	Blasbalg et al.	375/34
3,536,840	10/1970	Sullivan	375/58
4,385,384	5/1983	Rosbury et al.	371/22
4,438,511	3/1984	Baran	370/19
4,541,045	9/1985	Kromer,III	364/200
4,562,426	12/1985	Forney, Jr.	375/27
4,578,800	3/1986	Yasuda et al.	375/106
4,583,236	4/1986	Kromer et al.	371/46
4,589,111	5/1986	Adachi	371/32
4,606,044	8/1986	Kudo	375/58
4,630,126	12/1986	Kaku et al.	375/58

FOREIGN PATENT DOCUMENTS

0154565	11/1985	European Pat. Off.	375/8

OTHER PUBLICATIONS

"The Viterbi Algorithm", *Proceedings of the IEEE,* vol. 61, No. 3, Mar. 1973; Forney, Jr.; pp. 268–278.

Hayes, "The Viterbi Algorithm Applied to Digital Data Transmission", *Journal of Communications Society,* vol. 13, pp. 15–20, Mar. 1975.

Computer Design, Oct. 15, 1985, p. 108.

Codex 2600 Series Advertisement, 1985.

Codex Model 2660 Modem, 10/85.

[57] **ABSTRACT**

A method for changing the data transmission rates in a synchronous data communication system including a first modem and a second modem coupled together through a transmission channel, the transmission channel including a first path for transmissions from the first modem to the second modem and a second path for transmission from the second modem to the first modem, includes the steps of determining, at the first modem, that the second path of the transmission channel is adequately high in quality to support an increase in transmission rate. Next it is determined, at the second modem, that the first path of the transmission channel is adequately high in quality to support an increase in transmission rate. A training sequence is then transmitted at an increased transmission rate from the second modem to the first modem. Next, a training sequence is transmitted at the increased transmission rate from the first modem to the second modem.

16 Claims, 8 Drawing Sheets